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Commissioner for Patents
POB 1450, Alexandria, VA 22313-1450
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OFFICIAL


Re: NABATAME et al, Serial No. 09/806,861
Att'y Docket 501.39983X00
Ex. J. Kennedy/AU 2812/USPTO Conf. No. 6498

SUBMISSION

Sir:
Applicant hereby transmits the attached "STATEMENT OF SUBSTANCE OF INTERVIEW" (3 pages) regarding the above-identified application.

CERTIFICATE OF TRANSMISSION:

I hereby certify that the attached "Statement of Substance of Interview" (3 pages) is being **FORMALLY TRANSMITTED** via the USPTO Central Fax No. 703-872-9306 on 16 June 2004.


Alan E. Schiavelli

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501.39983X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: NABATAME et al

Serial No.: 09/806,861

Filed: April 5, 2001

For: Semiconductor Device And Manufacturing
Method Thereof

Art Unit: 2812

Examiner: J. Kennedy

STATEMENT OF SUBSTANCE OF INTERVIEW

Mail Stop: Amendment
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 16, 2004

Sir:

This is the statement of the substance of the personal interview conducted between the Examiner and the undersigned on June 1, 2004.

During the interview, the undersigned explained the present invention and the differences between the present invention and the patents to Dornfest et al and Hicks et al applied by the Examiner. In addition, the undersigned explained the amendments to claim 1 set forth in the Amendment After Final Rejection filed May 24, 2004.

As to the differences between the present invention and the patent to Dornfest et al and Hicks et al, the undersigned noted that the presently claimed invention is directed to a method of manufacturing the semiconductor device and that the particular method presently claimed, including forming a bottom electrode and a top electrode of a dielectric capacitor by metalorganic chemical vapor deposition process

at 180°C or higher and 250°C or lower using a cyclopentadienyl ruthenium as a precursor and a reaction gas selected from the group consisting of O₂, H₂, N₂, O, O₃, CO and CO₂, where a volume ratio of the reaction gas to a carrier gas is 1% or more, it is not disclosed by Dornfest et al. The undersigned also noted that the Hicks et al patent does not disclose forming a bottom electrode on at least a side wall of an insulation layer in a hole on a substrate. Moreover, while the Hicks et al patent discloses the use of various organometallic compounds in the presence of a reducing fluid at various temperatures, this patent does not specifically suggest the formation of a bottom electrode and top electrode at a temperature between 180°C and 250°C using a cyclopentadienyl ruthenium complex as a precursor. The undersigned pointed out Table 1 of Hicks et al which shows that, depending on the metal to be deposited, the temperature can be below 180°C and above 250°C. The undersigned urged that there was no suggestion in either Dornfest et al or Hicks et al to modify the teachings of these patents to arrive at the presently claimed invention.


The Examiner stated that she would consider the foregoing when considering the Amendment After Final Rejection filed May 24, 2004.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 501.39983X00),
and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP



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